

### **REMARKS/ARGUMENTS**

Reconsideration of this application is requested. Claims 1, 5, 7 and 9 remain in the application of which claims 1, 5 and 7 are directed to elected subject matter. Claim 9 remains in the application but withdrawn from consideration but to be rejoined at a later date as set out on page 2, first paragraph of the Official Action. Claim 8 is canceled without disclaimer and without prejudice to a divisional application directed to the subject matter of that claim.

As a preliminary matter counsel notes that on the sheet "Office Action Summary" box (10) has not been marked indicating acceptance, or not, of the drawing by the examiner. This application contains a single sheet of drawings with two figures and a formal drawing was submitted on May 5, 2004. In the next communication please indicate acceptance (or not) of this formal drawing.

The claims have been amended in order to more particularly point out and distinctly claim that which applicants regard as their invention and to direct them to preferred aspects of the disclosure. In the amendments made, the subject matter of claim 2 has been incorporated into claim 1, namely the conductive resin composition must include carbon black together with the resin component and conductive filler. With regard to the graphite powder contained in the conductive filler, this graphite powder is in the form of an expanded graphite powder as discussed in the specification in the paragraph bridging pages 7 and 8. The examiner will note that applicants describe an expanded graphite as one being contained by treating flake graphite with concentrated sulfuric acid and then heating the treated graphite. This is in distinction from other types of graphite, including both artificial graphite and natural graphite, as discussed in more detail below.

Claim 1 is amended to provide performance properties for the conductive resin composition. The first recites a conductive resin composition having a resistance of  $10 \text{ m}\Omega\cdot\text{cm}$  or less as measured by the relevant JIS (Japanese Industrial Standard) test. Resistance is measured in accordance with the description given on page 17 of the description and a maximum value of 10 is indicated based on the description at page 13, lines 8-9. The conductive resin is also characterized as having a fluidity of 15% or more as measured according to the relevant JIS. Fluidity is measured according to the test procedures given in the paragraph bridging pages 16 and 17 of the description and its importance as a desirable property for the novel conductive

resin compositions is discussed in the description on page 14. Further measurements are described on page 13 with respect to Figure 2 of the drawings. A minimum fluidity of 15% is indicated based upon the data in Example 4, the lowest value for working Examples 1-11; *see* Table 1, page 18. The examiner will note that although comparative Example 2 has a fluidity of 20% the resistance value is orders of magnitude greater than the maximum resistance value required by amended claim 1. As a consequence of these amendments claim 2 has been canceled as redundant and claims 4 and 6 canceled as falling outside the scope of the working examples and as defined in amended claim 1.

A fluidity of 15% or greater in accordance with JIS K7210 indicates a boundary which determines whether or not the resin composition can be successfully injection molded or not. The compositions defined by applicants' claims are now those which can be successfully injection molded and not in contrast to various formulations and recipes disclosed in the prior art cited in the current Official Action.

Turning now to the issues raised in the outstanding Official Action, in item 5 of the Official Action previous claims 1, 2, 6 and 7 are rejected as being anticipated or obvious over WO '567 with the discussion focusing on the English language equivalent of EP 1351329. The applied reference does not disclose a separator having electric resistance of 10 mΩ·cm or more. The examples of EP '329 show electric resistances within a range of 18-500 mΩ·cm which are well outside applicants' maximum of 15. Resistance is reported in EP '329 in Example 4, page 11, where the lowest value is 18 and also in the various tables that follow on pages 13 and 15.

In item 6 of the Official Action, claims 1 and 4 are rejected as allegedly being anticipated by EP 1 061 597 (EP '597). Applicants understand that the fluidity, that is injection-moldability, is imparted into the resin compositions of this reference by using a particular carbon, namely graphitized meso-carbon microbeads having a diameter of 50 μm or less; *see* paragraphs 18, 24 and other passages including the Abstract. Applicants' desired fluidity and injection-moldability is obtained without the use of graphitized meso-carbon microbeads as required by EP '597.

Applicants' claims as above amended also specify the presence of expanded graphite. EP '597 does not describe nor disclose expanded graphite. While it is true that the reference states that "Any type of graphite powder may be used ..." (*see* paragraph 37) only artificial graphite

powder and natural graphite powder are specified. There is no discussion of expanded graphite of the type required by applicants' claims.

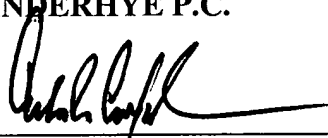
In summary, the resin compositions of the present invention have both the fluidity and electric conductance desirable by applying in combination the use of specific expanded graphite carbon black and fine carbon fiber of the type defined in the claims. Neither of the applied documents describes such compositions nor do they suggest them. These properties are desirable and quite unique and not described or suggested by either of the applied documents. For these reasons the rejections based upon these must be withdrawn and the now pending claims allowed including rejoinder of claim 9.

Reconsideration and favorable action are solicited. Should the examiner require further information, please contact the undersigned.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: \_\_\_\_\_

  
Arthur R. Crawford  
Reg. No. 25,327

ARC:eaw  
901 North Glebe Road, 11th Floor  
Arlington, VA 22203-1808  
Telephone: (703) 816-4000  
Facsimile: (703) 816-4100